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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,331	03/14/2001	Philip J. Lin	TEL4597P0061US	3858

7590 10/15/2002
WELSH & KATZ, LTD.
120 SOUTH RIVERSIDE PLAZA
22ND FLOOR
CHICAGO, IL 60606

EXAMINER

KIANNI, KAVEH C

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 10/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/808,331

Applicant(s)

LIN, PHILIP J.

Examiner

Kevin C Kianni

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-44 and 57-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-44 and 57-65 is/are rejected.
- 7) ☐ Claim(s) 66 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election with traverse of claims 10-21 in paper No. 9 is acknowledged. No grounds were given for the traversal. This is not found persuasive. The requirement is still deemed proper and therefore made FINAL.

Allowable Subject Matter

2. Claim 66 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 66 is objected because the prior art, in combination with other limitations of the base claim, does not teach wherein NI inputs comprise N1/K groups of signal carriers coupled to a corresponding number of KxK modules.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 41-44 and 57-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suemura et al. (US 6243178).

Regarding claim 41, Suemura teaches a signal coupling network for coupling any one of N1 inputs to any one of N2 outputs (shown in fig. 8 items T0-T1) comprising: a plurality of substantially identical, static, $K \times K$ signal interconnect modules (see fig. 8, items $K \times K$ interconnect signal modules 123), wherein each contains K^2 input lines, (see fig. 8-9 item 123, wherein each module 123 comprises of input lines 4^2 or K^2 lines) and couples them to K^2 output lines (see fig. 8-9 and 11, items 123 and 75 wherein 4^2 or K^2 lines of each module 123 couples to output lines 4^2 or K^2 lines of modules 75). However, Suemura does not specifically teach wherein the relationship of the above input output lines is $K < N1$. It is obvious to a person of ordinary skill in the art when the invention was made to reduce number of N1 modules shown in fig. 11 from 4 group modules 4×4 (K^2 Input/output) to three groups of (K^2 Input/output) so as to change the relationship of $K = N1$ to $K < N1$, since this relationship would be more compact and would reduce the cost of production (col. 3, lines 33-35), also it would have been an obvious matter of design choice to since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

Regarding claim 42, Suemura further teaches wherein the plurality comprises $(N1/K \times N2/K)$ modules (shown in fig. 11, wherein the input output of plurality of modules consisting of 4 cells, 123₀₋₃ has a relationship of N1 inputs and the 4 cells 75₀₋₃ has a relationship of N2 outputs, the input/output relationship is of $N1 \times N2 / K^2$ or $N1/K \times N2/K$).

Regarding claim 43, Suemura further teaches N1 input switches (see fig. 16, item 97; also col. 3, lines 43-64).

Regarding claim 44, Suemura further teaches N2 input switches (see fig. 16, item 75; also col. 3, lines 43-64).

Regarding claim 57, Suemura further teaches wherein N1 equals N2 (see fig. 8, wherein input lines N1, T0-15 is equal to N2, R0-15 output lines).

Regarding claim 58, Suemura further teaches wherein each of the KxK signal interconnect module (see fig. 8, item 123) comprises a plurality of substantially identical LxL interconnect modules (shown in fig. 11, items 123₀₋₃ and 75₀₋₃). Regarding the relationship where $L < K$, the arguments presented in rejection of claim 41, is analogous in rejection of claim 58.

Regarding claim 59, Suemura further teaches wherein the plurality of LxL interconnect modules comprises $(K/L)^2$ modules (see figure 11, items 123₀₋₃ and 75₀₋₃; wherein the input/ output relationship is $(K \times K)/(L \times L)$ or $(K/L)^2$).

Regarding claims 60-61 the arguments presented in rejection of claim 43-44, are analogous in rejection of claim 60-61.

Regarding claim 62, Suemura further teaches wherein connectivity between the inputs, the modules and the outputs is symmetrical relative to a selected centerline (shown in fig. 8, wherein the connectivity between the inputs T0-15, the modules 123 and the outputs R0-15 is symmetrical relative to a selected centerline).

Regarding claim 63, Suemura further teaches wherein each KxK module 123 comprises: a body portion which includes a plurality of LxL signal coupling networks (see fig. 11, items 123 and 75); input ports coupled to the body portion (fig. 8/11, items 123 are coupled to the body portion); output ports coupled to the body portion (fig. 8/11, items 75 are coupled to the body portion); and a plurality of signal paths, carried by the LxL signal coupling networks, the signal paths couple the input ports to the output ports (shown in figures 8 and 11, items signals paths λ_0 - λ_4 are coupled to input/output).

Regarding claim 64, Suemura further teaches wherein the plurality of signal paths comprises K^2 paths (see fig. 8 and 11, wherein each module 75 comprises of signals λ_0 - λ_4 in 75₀₋₃, output lines 4^2 or K^2 lines).

Regarding claim 65, Suemura further teaches wherein the signal paths comprise one of optical fibers or electrical conductors (see col. 5, lines 50-52).

Citation of Relevant Prior Art

5. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Pi et al. 5812088 Teaches at least claim 41

Kogelnik et al. 4787693

Dieudonne et al. 5703707

McKeown 55500858

Jahreis 5959748

Daneman et al. 6330102

These references are cited herein to show the relevance of the apparatus/methods taught within this reference as prior art.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaveh Cyrus Kianni whose telephone number is (703) 308-1216. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (703) 308-4881.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

or:

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(703) 308-5397, (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal
Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should
be directed to the Group Receptionist whose telephone number is (703) 305-4770.

Kevin Cyrus Kianni
Patent Examiner
Group Art Unit 2877


Frank Font
Supervisory Patent Examiner
Group Art Unit 2877

October 7, 2002